## Section 1 - Chemical Product and Company Identification

**Product Name** Fiber Glass Wool Insulation
**CAS#** Not applicable
**Generic Name** Fiber Glass Wool Product
**Formula** Not available
**Chemical Name:** Mixture
**Hazard Label** FGW-01 or FGW-01-HT or FGW-01-1009 or L1009

**Manufacturer Information**

Johns Manville
Performance Materials Division
P.O. Box 5108
Denver, CO 80127 USA

Telephone: 303-978-2000 8:00AM-5:00PM M-F
Internet Address: http://www.jm.com
Emergency: 800-424-9300 (Chemtrec, In English)

**Trade Names:** 800 Series Spin-Glas® Board Insulations; 1000 Series Spin Glas® Board; Fabrication Board; Grooved Duct Board; Hullboard (Incombustible); Hullinsul® Fiber Glass Board; Incombustible Microlite®; Linacoustic® RC; Mat-Faced Micro-Aire® Duct Board; Micro-Flex™ Large Diameter Pipe and Tank Wrap; Micro-Lok® Pipe Insulation; Permacote® Linacoustic® (Types: Standard, HP, and R-300); Precipitator Spin Glas®; R series Microlite® (plain, FSK, PSK, & vinyl faced); Spiracoustic™; Spin Glas® HTB 26 & 23; Spirocoustic Plus™; SuperDuct™ Boards; SuperDuct™ RC Boards; SuperVane®; Zeston Hi-Lo Temp® Insulation Inserts.

## Section 2 - Composition / Information on Ingredients

| CAS # | Component | Percent |
|---|---|---|
| 65997-17-3 | Fiber Glass Wool | 50-98 |
| Not Available | Non-woven, AP, FSK, PSK, or vinyl facings; or vinyl, acrylic, or latex coatings | 0-40 |
| 25104-55-6 | Urea extended phenol-formaldehyde binder (cured) | 2-18* |
| 25212-25-3 | Urea extended phenol-melamine formaldehyde binder (cured) | 2-18* |
| Not Available | Acrylic Coating | 0-10** |
| Not Available | Continuous Filament Glass Fiber (CAS # 65997-17-3) | 0-10** |
| 1163-19-5 | Decabromodiphenyl oxide (in coating) | <1*** |
| 25637-99-4 | Cyclododecane, hexabromo- | <1**** |
| 1309-64-4 | Antimony trioxide | >0.1***** |

**Additional Component Information**

* Binder may be either of these.
** Component of Mat-Faced Micro-Aire® Duct Board only.
*** In coated products only.
**** In Spiracoustic product.
***** Note: Antimony trioxide (fire retardant) may be present in the facings and/or adhesives. Occupational exposure to airborne antimony trioxide is not expected to occur due to product form(s) and intended use(s). Exposure limit is given for reference only.

## Section 3 - Hazards Identification

**Emergency Overview**

APPEARANCE AND ODOR: Gold, yellow, or black fibrous glass blanket, board, or formed shape with or without facings. No significant odor.

Products designed for high temperature applications (above 177°C/350°F) may release gases irritating to the eyes, nose and throat during initial heat-up. In tightly confined or poorly ventilated areas, use air supplied respirators during the first heat-up cycles.

Inhalation of excessive amounts of dust from the product may cause temporary upper respiratory irritation and/or congestion--remove individual to fresh air.

**Potential Health Effects**

### Summary

Breathing dust from this product may cause a scratchy throat, congestion, and slight coughing. Getting dust or fibers on the skin, or in the eyes may cause itching, rash, or redness. Additional health and safety information is provided in Section 11 of this material safety data sheet.

When subjected to high heat and humidity, this product may release formaldehyde gas. Formaldehyde is irritating to the eyes and respiratory system and may cause cancer (based on animal studies). Formaldehyde may cause skin or respiratory sensitization (allergy).

HMIS (Hazardous Materials Information System) ratings for Health - Flammability - Physical Hazard: *1 - 0 - 0

### Inhalation

Irritation of the upper respiratory tract (scratchy throat), coughing, and congestion may occur in extreme exposures.

### Skin

Temporary irritation (itching) or redness may occur.

### Ingestion

This product is not intended to be ingested (eaten). If ingested, it may cause temporary irritation to the gastrointestinal (digestive) tract.

### Eyes

Temporary irritation (itching) or redness may occur.

### Ears

Temporary irritation (itching) or redness may occur.

### Primary Routes of Entry (Exposure)

Inhalation (breathing dust, fibers, or vapors), skin, and eye contact.

### Target Organs

Nose (nasal passages), throat, lungs, skin, eyes.

### Medical Conditions Aggravated by Exposure

Pre-existing chronic respiratory, skin, or eye diseases or conditions.

## Section 4 - First Aid Measures

### First Aid: Inhalation

Remove to fresh air. Drink water to clear throat, and blow nose to remove dust.

### First Aid: Skin

Wash gently with soap and warm water to remove dust. Wash hands before eating or using the restroom.

### First Aid: Ingestion

Product is not intended to be ingested or eaten. If this product is ingested, irritation of the gastrointestinal (GI) tract may occur, and should be treated symptomatically. Rinse mouth with water to remove fibers, and drink plenty of water to help reduce the irritation. No chronic effects are expected following ingestion.

### First Aid: Eyes

Do not rub or scratch your eyes. Dust particles may cause the eye to be scratched. Flush eyes with large amounts of water for 5-15 minutes. If irritation persists, contact a medical professional.

### First Aid: Ears

Do not rub or scratch the ear if itching occurs. Wash gently with soap and warm water to remove dust or fibers.

## Section 5 - Fire Fighting Measures

**Flash Point:** Not applicable
**Method Used:** Not applicable
**Upper Flammable Limit (UFL):** Not applicable
**Lower Flammable Limit (LFL):** Not applicable
**Auto Ignition:** Not determined
**Flammability Classification:** Not determined
**Rate of Burning:** Not determined

### General Fire Hazards

There is no potential for spontaneous fire or explosion.

### Extinguishing Media

Carbon dioxide ($CO_2$), water, water fog, dry chemical.

### Fire Fighting Equipment/Instructions

No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases.

NFPA Ratings for Health - Flammability - Reactivity are: 1 - 0 - 0

## Section 6 - Accidental Release Measures

**Containment Procedures**

Pick up large pieces. Vacuum dusts. If sweeping is necessary, use a dust suppressant such as water. Do not dry sweep dust accumulation or use compressed air for clean-up. These procedures will help to minimize potential exposures.

**Clean-Up Procedures**

Avoid the generation of dusts during clean-up.

## Section 7 - Handling and Storage

**Handling Procedures**

Use protective equipment as described in Section 8 of this materialsafety data sheet when handling uncontained material.

**Storage Procedures**

Warehouse storage should be in accordance with package directions, if any. Material should be kept dry, and protected from moisture.

## Section 8 - Exposure Controls / Personal Protection

**Exposure Guidelines**

**A: General Product Information**

Glass wool fiber, OSHA voluntary Health and Safety Partnership Program (HSPP): 1 f/cc TWA for fibers longer than 5 µm with a diameter less than 3 µm.

Protective equipment should be used as necessary to prevent irritation of the throat, eyes, and skin, and to keep exposures below the applicable exposure limits identified in Section 8.

**B: Component Exposure Limits**

**Fiber Glass Wool (65997-17-3)**

ACGIH: 1 f/cc TWA (respirable fibers: length > 5 µm, aspect ratio equal to or greater than 3:1, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination.)

**Continuous Filament Glass Fiber (CAS # 65997-17-3)**

ACGIH: 1 f/cc TWA (respirable fibers: length > 5 µm, aspect ratio equal to or greater than 3:1, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination.); 5 mg/m3 TWA (inhalable fraction)

**PERSONAL PROTECTIVE EQUIPMENT**

**Personal Protective Equipment: Eyes/Face**

Safety glasses with sideshields are recommended to keep dust out of the eyes.

**Personal Protective Equipment: Ears**

Use ear protection (earplugs, hood, or earmuffs) to prevent airborne dust or fibers from entering the ear.

**Personal Protective Equipment: Skin**

Leather or cotton gloves should be worn to prevent skin contact and irritation. Barrier creams may also be used to reduce skin contact and irritation caused by fiber glass.

**Personal Protective Equipment: Respiratory**

A respirator should be used if ventilation is unavailable, or is inadequate for keeping dust and fiber levels below the applicable exposure limits. In those cases, use a NIOSH-certified disposable or reusable particulate respirator with an efficiency rating of N95 or higher (under 42 CFR 84) when working with this product. For exposures up to five times the established exposure limits use a quarter-mask respirator, rated N95 or higher; and for exposures up to ten times the established exposure limits use a half-mask respirator (e.g., MSA's DM-11, Racal's Delta N95, 3M's 8210), rated N95 or higher. Operations such as sawing, blowing, tear out, and spraying may generate airborne fiber concentrations requiring a higher level of respiratory protection. For exposures up to 50 times the established exposure limits use a full-face respirator, rated N99 or higher.

Products designed for high temperature applications (above 177°C/350°F) may release gases irritating to the eyes, nose and throat during initial heat-up. In tightly confined or poorly ventilated areas, use air supplied respirators during the first heat-up cycles.

### Ventilation

In fixed manufacturing settings, local exhaust ventilation should be provided at areas of cutting to remove airborne dust and fibers. General dilution ventilation should be provided as necessary to keep airborne dust and fibers below the applicable exposure limits and guidelines. The need for ventilation systems should be evaluated by a professional industrial hygienist, while the design of specific ventilation systems should be conducted by a professional engineer.

### Personal Protective Equipment: General

Wear a cap, a loose-fitting, long-sleeved shirt and long pants to protect skin from irritation. Exposed skin areas should be washed with soap and warm water after handling or working with fiber glass. Clothing should be washed separately from other clothes, and the washer should be rinsed thoroughly (run empty for a complete wash cycle). This will reduce the chances of fiber glass being transferred to other clothing.

## Section 9 - Physical & Chemical Properties

| | | | |
|---|---|---|---|
| **Appearance:** | Gold, yellow, or black fibrous glass blanket, board, or formed shapes, with or without facings. | **Odor:** | Mild formaldehyde |
| **Physical State:** | Solid | **pH:** | Not applicable |
| **Vapor Pressure:** | Not applicable | **Vapor Density:** | Not applicable |
| **Boiling Point:** | Not applicable | **Melting Point:** | >704°C/1300°F |
| **Solubility ($H_2O$):** | Nil | **Specific Gravity:** | Variable |
| **Percent Volatile:** | No data | **VOC:** | Not applicable |

## Section 10 - Chemical Stability & Reactivity Information

### Chemical Stability

This is a stable material.

### Hazardous Decomposition

The decomposition products from this material are those that would be expected from any organic (carbon-containing) material, and are mainly derived from pyrolysis , or burning, of the resin. These decomposition products may include carbon monoxide, carbon dioxide, carbon particles, and traces of hydrogen cyanide.

EcoTherm pipe insulation was tested for off-gassing as the product was heated to 950°F (520°C). Ammonia was found during the heat-up period at 40 ppm when exhaust ventilation was off and <1-9 ppm when ventilation was on. All VOC's covered under EPA Method IP-1A were either not detected, or were less than 0.1 ppm. Ho halogenated compounds (HF, HCL, HBr) were detected in any of the samples during heat-up or steady state. In addition, neither formaldehyde nor methanol were detected in any of the samples. A trace amount of HCN (0.2 to 1 ppm) was detected during a portion of the heat-up cycle, but was significantly below the OSHA and ACGIH limits and it was not detected during steady state conditions. All of the CO levels were below both OSHA and ACGIH limits.

### Hazardous Polymerization

Will not occur.

## Section 11 - Toxicological Information

### Acute Toxicity

### A: General Product Information

Dust from this product is a mechanical irritant, which means that it may cause temporary irritation or scratchiness of the throat, and/or itching of the eyes and skin.

Products designed for high temperature applications (above 177°C/350°F) may release gases irritating to the eyes, nose and throat during initial heat-up. In tightly confined or poorly ventilated areas, use air supplied respirators during the first heat-up cycles.

### B: Component Analysis - LD50/LC50

**Urea extended phenol-formaldehyde binder (cured) (25104-55-6)**
Oral LD50 Rat: 7 g/kg; Oral LD50 Mouse: 7 g/kg

**Decabromodiphenyl oxide (in coating) (1163-19-5)**
Oral LD50 Rat: >5 g/kg

**Antimony trioxide (1309-64-4)**
Oral LD50 Rat: >34600 mg/kg

### Carcinogenicity

#### A: General Product Information

No additional information available.

#### B: Component Carcinogenicity

**Fiber Glass Wool (65997-17-3)**

ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans (related to Glass wool fibers)
NTP: Reasonably Anticipated To Be A Carcinogen (respirable size) (related to Glasswool) (Possible Select Carcinogen)
IARC: Group 3 - Not Classifiable (IARC Monograph 43, 1988; Monograph 81, 2002)

**Continuous Filament Glass Fiber (CAS # 65997-17-3) (Not Available)**

ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Group 3 - Not Classifiable (IARC Monograph 43, 1988; Monograph 81, 2002)

**Decabromodiphenyl oxide (in coating) (1163-19-5)**

IARC: Group 3 - Not Classifiable (IARC Monograph 71, 1999; Monograph 48, 1990)

**Antimony trioxide (1309-64-4)**

ACGIH: A2 - Suspected Human Carcinogen (production)
IARC: Group 2B - Possibly Carcinogenic to Humans (IARC Monograph 47, 1989)

### Chronic Toxicity

Antimony trioxide causes pneumoconiosis in humans. Antimony trioxide was tested for carcinogenicity by inhalation exposure in male and female rats. Evidence for pulmonary cancer in the rat studies was inconsistent. In the earlier studies, rats were exposed to extremely high dose levels; exposed female rats, but not males, had an increased cancer incidence. However, in later studies using more advanced techniques, the rats did not show increased cancers. USEPA and CalEPA concluded that these studies are inadequate for use in quantitative cancer risk assessment. According to USEPA's recently proposed cancer risk assessment guidance, a margin of exposure (MOE) analysis is more appropriate when, as with antimony trioxide, the carcinogenicity of a chemical may be a secondary effect of toxicity or of an induced physiological change. The MOE approach was adopted after conferring with CalEPA scientists involved in the Proposition 65 program who suggested using USEPA's "Proposed Guidance for Carcinogen Risk Assessment." An independent laboratory conducted a risk analysis using the MOE approach; the results indicated that the potential levels of exposure to antimony trioxide in JM products pose no significant cancer risk to the end-user of these products.

Fiber Glass Wool: In October 2001, IARC classified fiber glass wool as Group 3, "not classifiable as to its carcinogenicity to humans." The 2001 decision was based on current human and animal research that shows no association between inhalation exposure to dust from fiber glass wool and the development of respiratory disease. This is a reversal of the IARC finding in 1987 of a Group 2B designation (possibly carcinogenic to humans) based on earlier studies in which animals were injected with large quantities of fiber glass. NTP and ACGIH have not yet reviewed the IARC reclassification or the most current fiber glass health research; at this time, both agencies continue to classify glass wool based on the earlier animal injection studies.

A detailed listing of references on fiber glass health effects can be found in the publication HSE-64C, "Heath and Safety Aspects of Fiber Glass," which can be downloaded from Johns Manville's Internet homepage, www.jm.com (select "Health Safety and Environment").

## Section 12 - Ecological Information

### Ecotoxicity

#### A: General Product Information

No data available for this product.

#### B: Component Analysis - Ecotoxicity - Aquatic Toxicity

**Antimony trioxide (1309-64-4)**

96 Hr LC50 fathead minnow: 833.0 mg/L; 96 Hr LC50 bluegill: 530 mg/L

## Section 13 - Disposal Considerations

**US EPA Waste Number & Descriptions**

**A: General Product Information**

This product is not regulated as a hazardous waste by the U.S. Environmental Protection Agency (EPA) under Resource Conservation and Recovery Act (RCRA) regulations.

**B: Component Waste Numbers**

No EPA Waste Numbers are applicable for this product's components.

**Disposal Instructions**

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

## Section 14 - Transportation Information

**Shipping Name:** This product is not classified as a hazardous material for transport.

## Section 15 - Regulatory Information

**US Federal Regulations**

**A: General Product Information**

SARA 311/312: This product is not classified as hazardous under SARA 311/312.

**B: Component Analysis**

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

**Antimony trioxide (1309-64-4)**

CERCLA: 1000 lb final RQ; 454 kg final RQ

**State Regulations**

**A: General Product Information**

No information available for the product.

**B: Component Analysis - State**

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS # | CA | FL | MA | MN | NJ | PA |
|---|---|---|---|---|---|---|---|
| Fiber Glass Wool ([1]related to Mineral wool fiber) ([2]related to Glass wool fiber) | 65997-17-3 | Yes[1] | No | Yes[1] | Yes | No | Yes[2] |
| Decabromodiphenyl oxide (in coating) | 1163-19-5 | No | No | Yes | Yes | Yes | Yes |
| Antimony trioxide | 1309-64-4 | Yes | No | Yes | Yes | Yes | Yes |

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): WARNING! This product contains a chemical known to the state of California to cause cancer:

**Antimony trioxide CAS # 1309-64-4**

**A: TSCA Status**

This product and its components are listed on the TSCA 8(b) inventory.

The following components listed in this product are listed on the TSCA Export Notification 12(b) list.

**TSCA 12(b)**

| Component | CAS | TSCA 12 (b) |
|---|---|---|
| Decabromodiphenyl oxide (in coating) | 1163-19-5 | Yes |

### B: Component Analysis - Inventory

| Component | CAS # | TSCA | DSL | EINECS |
|---|---|---|---|---|
| Fiber Glass Wool | 65997-17-3 | Yes | Yes | Yes |
| Urea extended phenol-formaldehyde binder (cured) | 25104-55-6 | Yes | Yes | No |
| Urea extended phenol-melamine formaldehyde binder (cured) | 25212-25-3 | Yes | No | No |
| Decabromodiphenyl oxide (in coating) | 1163-19-5 | Yes | Yes | Yes |
| Cyclododecane, hexabromo- | 25637-99-4 | Yes | No | Yes |
| Antimony trioxide | 1309-64-4 | Yes | Yes | Yes |

### Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

## Section 16 - Other Information

### Other Information

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The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

| Date | MSDS # | Reason |
|---|---|---|
| 08/01/00 | 1009-1.0000 | New MSDS authoring system. |
| 01/08/01 | 1009-1.0100 | 16-rev-01 |
| 01/30/01 | 1009-1.0101 | Update section 11. |
| 09/07/01 | 1009-1.0102 | Sect. 2: Hexabromocyclododecane added as an ingredient for SuperRound and Spiracoustic products. |
| 01/02/02 | 1009-2.0000 | Update Sections 3, 11 & 15 for IARC 2001 re-classification of fiber glass wool to Group 3, not classifiable as to carcinogenicity to humans. |
| 04/23/02 | 1009-2.0001 | Sect. 2: two product names added, 824 and 830 CAN Spin-Glas®. Sect. 15: Update TSCA 12(b), Decabromodiphenyl oxide delisted. |
| 03/18/03 | 1009-2.0002 | Sect. 1: deleted "Theatre-SHIELD". Added HMIS & NFPA (Sect. 3 & 11). |
| 07/01/03 | 1009-2.0004 | Sect. 1: deleted discontinued trade names: Micro-Aire Duct Board, Microlite Duct Wrap. |
| 08/28/03 | 1009-2.0005 | Sect. 1: added "Micro-Flex™ CTS", new product. |
| 10/22/03 | 1009-2.0105 | Section 15, TSCA 12b, add Decabromodiphenyl oxide |
| 04/28/04 | 1009-2.0106 | Regulatory update. Minor edits. |
| 05/20/04 | 1009-2.0107 | Sect. 1 Removal of discontinued trade names: 824 CAN Spin-Glas®; 830 CAN Spin-Glas®; Acoustic Backing Board; BS 476, EcoTherm™ Industrial Pipe Insulation; Fabricated Duct Board; Permacote Spiracoustic™; Pipe and Tank Insulation; Rigid Round™ (faced); Spiracoustic™; SuperRound®. |
| 08/05/04 | 1009-2.0108 | Sect. 1 Label ID edit. Removal of discontinued trade name, Micro-Flex CTS. |

This is the end of MSDS # 1009